

AMER FINAL - EXPEDITED PROCEDURE

REMARKS

Claims 29, 30 and 32 have been amended for purposes of clarity and thus for reasons unrelated to patentability. Support for the amendments of Claims 29, 30 and 32 appears in the specification at least at page 27, line 11 to page 28, line 24.

The sections below are numbered to correspond with the section numbering used by the Examiner in the Office Action.

1/2) Claims 12-21 and 29-38 are patentable over Posa.

A) CLAIMS 12-21, 35-38 ARE PATENTABLE OVER POSA.

The Examiner states:

Applicant first argues that Posa fails to teach an inlet valve between a first regulator and a manifold (pp. 2-3). Specifically, the applicant argues that the valves 26 are installed within the manifold 22 (p. 3 first full paragraph).

The examiner disagrees. It is first noted that the reference teaches that the valves can be installed within the manifold (col. 5 lines 2-5). This implies that the valves do not have to be within the manifold.

Indeed, looking at Figure 1, the skilled artisan would realize the valve 26 is specifically located outside manifold 22. **Hence, it is the examiner's position that while the reference teaches the possibility of placing the valves within the manifold, the valves are located outside of the manifold.** (Office Action, pp. 2-3, emphasis added.)

The Examiner's statement is respectfully traversed. Applicant respectfully submits that **the purpose of the manifold** of Posa is to provide simultaneous switching between flows of reactive and nonreactive gas between a process chamber and a vent chamber. Accordingly, the valves are within or part of the manifold.

For example, in the abstract of Posa, Posa teaches:

Apparatus for producing a constant flow, constant pressure chemical vapor deposition includes **a manifold having inlet valves for simultaneously switching equal**

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flows of reactive and nonreactive gas between a process chamber and a vent chamber. (Emphasis added.)

The Examiner's initial assertion is that:

It is first noted that the reference teaches that the valves can be installed within the manifold (col. 5 lines 2-5). This implies that the valves do not have to be within the manifold. (Office Action, page 2)

However, at col. 5, lines 2-5, cited by the Examiner, Posa teaches:

Any number of valves 26 with associated gas sources 20, 24 can be installed within the manifold 22, a single valve 26 shown in FIG. 1 only for purposes of illustration.

Accordingly, read in context, Applicant respectfully submits that Posa teaches that although a single valve 26 is shown in FIG. 1 for purposes of illustration, any number of valves 26 with associated gas sources can be installed within the manifold 22. Applicant respectfully submits that the Examiner has failed to call out where Posa teaches at col. 5, lines 2-5 that there is an implication that the valves do not have to be within the manifold.

The Examiner's further assertion is that:

Indeed, looking at Figure 1, the skilled artisan would realize the valve 26 is specifically located outside manifold 22. (Office Action, pages 2-3.)

Applicant notes that with respect to FIG. 1, Posa teaches that "FIG. 1 is a **schematic diagram**" at col. 4, line 13, emphasis added. To the extent that the Examiner is literally looking at the reference numeral 26 in FIG. 1, Applicant notes that the "source 20" is not coupled to this element. In fact, the switching of source 20 is clearly shown **inside of the manifold 22**.

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Applicant directs the Examiner's attention to FIG. 2 of Posa. With regards to FIG. 2, Posa teaches:

FIG. 2 shows a cross-sectional view of a first embodiment of the manifold 22 of FIG. 1, labeled **manifold 100 in FIG. 2**, in communication with the apparatus body 12. A plurality of bellows switching valves 102, 104 are mounted **in the linear manifold 100**.

Associated with each valve are first and second manifold inlets 106 and 108 for receiving gas flows **from the reactive gas source 20 and nonreactive gas source 24**, respectively. Inlet 106 connects to a valve cavity 110 containing a valve member 112 mounted to a reciprocable actuating rod 114. The member 112 switches the reactive gas flow between a first outlet to a vent path 115 and vent chamber 18 and a second outlet to a process path 116. (col. 5, line 58 to col. 6, line 2, emphasis added.)

Again, Posa clearly sets forth that the switching of the reactive gas source 20 and nonreactive gas source 24 occurs in the manifold.

Thus, for the reasons set forth in the Amendment filed on November 6, 2002, as further clarified above, the Examiner has failed to callout where Posa teaches or suggests a method comprising:

opening a first gas manifold inlet valve **coupled between a first regulator and a gas manifold**;
regulating a flow rate of a flow of a first process gas **through said first gas manifold inlet valve to said gas manifold** with said first regulator;
opening a second gas manifold inlet valve **coupled between a second regulator and said gas manifold**; and
regulating a flow rate of a flow of a second process gas **through said second gas manifold inlet valve to said gas manifold** with said second regulator, wherein said first process gas and said second process gas mix in said gas manifold,

as recited in Claim 12, emphasis added. For at least the above reasons, Claim 12 is allowable over Posa. Claims 13-20, which depend from Claim 12, are allowable for at least the same reasons as Claim 12.

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Claims 21, 35, 36, and 38 are allowable over Posa for reasons similar to Claim 12. Claim 37, which depends from Claim 36, is allowable for at least the same reasons as Claim 36.

B. CLAIMS 29-34 ARE PATENTABLE OVER POSA.

The Examiner states:

Applicant also argues that Posa fails to teach only a portion of the reactive gas is supplied (pp.5-6).

The examiner agrees in part. While the examiner does not necessarily take issue with this, it is noted that there is no such recitation of such a limitation anywhere in the instant claims as presently written. Hence, the applicant's arguments are not commensurate in scope with the instant claims. (Office Action, page 3, emphasis added.)

Claim 29 has been amended for purposes of clarity and now recites a method comprising:

setting a first flow rate of a flow of a first gas to a mixer;

setting a second flow rate of a flow of a second gas to said mixer, **wherein a first flow of a gas mixture comprising said first gas and said second gas exits said mixer**, said first flow of said gas mixture having a third flow rate;

setting a fourth flow rate of a second flow of said gas mixture to a reactor; and

directing said second flow of said gas mixture to said reactor, said second flow being a first portion of said first flow of said gas mixture exiting said mixer.

(Emphasis added.)

Applicant respectfully submits that for the reasons set forth in the Amendment filed on November 6, 2002, as further clarified above, Claim 29 is allowable over Posa. Claims 30-31, which depend from Claim 29, are allowable over Posa for at least the same reasons as Claim 29.

Claim 32 has been amended for purposes of clarity and now recites a method comprising:

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setting a flow rate of a flow of a dopant gas to a mixer;

setting a flow rate of a flow of a carrier gas to said mixer, wherein said dopant gas and said carrier gas mix in said mixer to form a process gas which flows out of said mixer; and

setting a flow rate of a first flow of said process gas to a reactor, wherein a difference between said flow of said process gas out of said mixer and said first flow of said process gas to said reactor is excess process gas, said first flow of said process gas and said excess process gas being portions of said flow of said process gas out of said mixer. (Emphasis added.)

Applicant respectfully submits that Claim 32 is allowable over Posa for reasons similar to Claim 29. Claims 33-34, which depend from Claim 32, are allowable over Posa for at least the same reasons as Claim 32.

For the above reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

3) As to 37 C.F.R. § 1.116

The amendments to the claims are to add clarity in response to the rejections set forth in the Office Action. Therefore, entry of this Amendment requires neither consideration of new issues nor a new search. Further, this Amendment places the application in a condition for allowance.

Therefore, entry of this Amendment is appropriate under 37 C.F.R. § 116. If the Examiner should disagree, the Examiner is requested to enter the Amendment to narrow the issues on appeal.

CONCLUSION

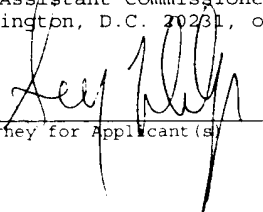
Claims 12-21 and 29-38 are pending in the application. For the foregoing reasons, Applicant respectfully requests allowance of all pending claims. If the Examiner has any questions relating to the above, the Examiner is respectfully

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requested to telephone the undersigned Attorney for Applicant(s).

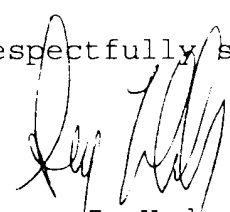
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on March 3, 2003.


Attorney for Applicant(s)

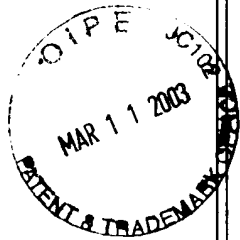
March 3, 2003
Date of Signature

Respectfully submitted,


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Applicant(s): Gary M. Moore
Assignee: Moore Epitaxial Inc.
Title: METHOD OF CONTROLLING GAS FLOW TO A SEMICONDUCTOR
PROCESSING REACTOR
Serial No.: 09/765,919 Filed: January 18, 2001
Examiner: Chen, Bret P. Group Art Unit: 1762
Docket No.: MTEC101001

Monterey, CA
March 3, 2003

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 29-30 and 32 have been amended as follows:

29. (AMENDED) A method comprising:

setting a first flow rate of a flow of a first gas to a mixer;

setting a second flow rate of a flow of a second gas to said mixer, wherein a first flow of a gas mixture comprising said first gas and said second gas exits said mixer, said first flow of said gas mixture having a third flow rate;

setting a fourth flow rate of a second flow of said gas mixture to a reactor; and

directing said second flow of said gas mixture to said reactor, said second flow being a first portion of said first flow of said gas mixture exiting said mixer.

30. (AMENDED) The method of Claim 29 further comprising directing a third flow of said gas mixture to an exhaust, said third flow of said gas mixture having a fifth flow rate equal to a difference between said third flow rate and said second

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flow rate, said third flow being a second portion of said first flow of said gas mixture exiting said mixer.

32. (AMENDED) A method comprising:

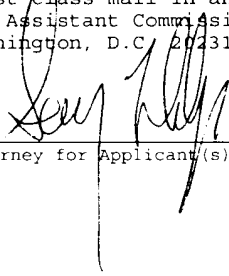
setting a flow rate of a flow of a dopant gas to a mixer;

setting a flow rate of a flow of a carrier gas to said mixer, wherein said dopant gas and said carrier gas mix in said mixer to form a process gas which flows out of said mixer; and

setting a flow rate of a first flow of said process gas to a reactor, wherein a difference between said flow of said process gas out of said mixer and said first flow of said process gas to said reactor is excess process gas, said first flow of said process gas and said excess process gas being portions of said flow of said process gas out of said mixer.

CERTIFICATE OF MAILING

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Attorney for Applicant(s)

March 3, 2003

Date of Signature